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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,281

04/14/2004

Robert A. Pangrcic

6203

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GREER, BURNS & CRAIN  
300 S WACKER DR  
25TH FLOOR  
CHICAGO, IL 60606

EXAMINER

MUI, CHRISTINE T

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/824,281	<b>Applicant(s)</b> PANGRCIC, ROBERT A.	
	<b>Examiner</b> CHRISTINE T. MUI	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 May 2008 has been entered.

### ***Response to Arguments***

2. Applicant's arguments, see REMARKS, filed 27 May 2008, with respect to the rejection(s) of claim(s) 1-20 under 35 USC 102(b) and 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of USP 6,277,351 to Swinehart.

3. The previous rejection is withdrawn because of amendments to the independent claims, where the coating is non-reactive to the electrolyte.

### ***Claim Objections***

4. Claim 20 is objected to because of the following informalities: In line 2 of the instant claim, where it reads 'R751O', it is believed by the examiner that the graphite composite should be 'R7510'. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 6,277,351 to Swinehart (herein referred 'Swinehart').

7. Regarding claims 1, 6 and 9-10, the reference Swinehart discloses a crucible for growing macrocrystals. The crucible is used to grow crystals of halides of an element of Group 1a and Group 2a of the Periodic Table, particularly the alkali metal of fluorides and alkaline earth meal fluorides, lead fluoride and crystals of the foregoing salts which are doped with desirable metal ion dopants. The crucible is of unitary (or monolithic) material inert with respect to a melt to be solidified, such as graphite, able to withstand temperatures required to melt the material to be grown and to be shaped so that the bottom is generally trapezoidal or conical bottom, tapered downward, the width of the bottom being less than that of the top of the crucible. As disclosed in Figure 10, the generally cylindrical monolithic flat bottomed graphite crucible has the interior surfaces coated by a temperature resistant coating or a surface polished smooth with a fine metal or glass wool or abrasive pads to minimize the extent to which melt might enter pores of the graphite (see column 1, lines 37-42, column 7, lines 23-34, column 9, lines 50-55, column 10, lines 49-60, column 17, lines 41-55).

Art Unit: 1797

8. Regarding claims 2-5, the instant claims are directed to the intended use of the device and are not considered a limitation of the container as claimed. Furthermore, the reference Swinehart discloses using the graphite crucible for the growth of macrocrystals that use salts of Group 1a and 2a. Swinehart also discloses removing impurities from the fired crucible with a purification treatment, but only mentions avoiding nitric acid to prevent the formation of graphite oxide, making the inside surface of the crucible wettable (see column 1, lines 37-42, column 14, lines 56-60). It is interpreted by the examiner that the graphite crucible is able to hold or contain an acid, such as sulfuric acid, hydrofluoric acid and perchloric acid as claimed so that it does not form graphite oxide.

9. Regarding claim 11, the reference Swinehart discloses a graphite cover which seals the top of the graphite crucible (see column 17, lines 43-44).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swinehart as applied to claim 11 above, and further in view of USP 3,858,767 to Borin (herein referred 'Borin').

Regarding claim 12, the reference Swinehart discloses the claimed invention except for where the cover includes a flange and at least one c-channel. Borin discloses a single piece molded plastic container for storing and dispensing liquids comprising a disposable plastic cup and lid. The cup has an upper edge which terminates in vertically extending shoulders contiguous with opposite ends of an uninterrupted upper edge of a spout. The spout extends outwardly from a sidewall of the cup with the upper edge of the spout lying in a plane below the upper edge of the cup. The lid covers an open top of the cup, supports a flat flexible and resilient flap, and includes an open-bottom channel for receiving in a fluid-tight seal the upper edge and shoulders of the sidewall of the cup to releasably hold the lid on the cup. The flap is contiguous with a lid and cantilevers outwardly therefrom to normally rest on the upper edge of and seal the spout and to automatically rise from the spout as liquid in the cup presses on an underside thereof with a tipping of the cup to permit a dispensing of liquid through the spout. The container is used for holding material such as coffee or other hot beverages, but is it also interpreted by the examiner that coffee may be a liquid of a high temperature especially after immediate filling of the container (see abstract, column 1, line 7, column 2, lines 30-65, column 5, lines 10-12). Furthermore, it is interpreted by the examiner that the portion of the container that supports a flat flexible and resilient

flap that is and includes an open-bottom channel for receiving in a fluid-tight seal the upper edge and shoulders of the sidewall of the cup to releasably hold the lid on the cup and the flap is contiguous with a lid and cantilevers outwardly, is considered to be a C-channel and one flange to fluid-tight seal the container so that content are prevented from spilling over the top of the container and remain in the inner receiving portion of the container. It would have been obvious to one having ordinary skill in the art the time the invention was made to modify the cover of the container with a flange and at least one c-channel so that one can ensure the cover tightly seals the contents of the container and ensures the cover is not easily removable.

4. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swinehart as applied to claim 10 above, and further in view of WO 03/106371 to Imam (herein referred 'Imam').

5. Regarding claims 13-15, the reference Swinehart discloses the claimed invention except for where the crucible has a pouring spout and/or handle. Imam discloses a silicon carbide based crucible that is able to hold materials or substances from a mixture of silicon carbide powder and graphite flakes bound together by the carbonized residue of a binder compound. The crucible is made by pressing the mixture of silicon carbide, graphite and a binder to form a green body where then the body is subjected to "fettling" where it is machined to having spouts or handling lugs. The body is cured to remove volatiles from the binder and a glaze is applied to the crucible to protect the body against oxidation and commercial use. The crucible that is manufactured can be expected to hold substrates at temperatures as high as 1400 degrees Celsius (see

Art Unit: 1797

pages 5 and 17). It would have been obvious to one having ordinary skill in the art the time the invention was made to modify the container so that it also has a pouring spout and a handle so that in the event of transferring liquids from the container, the liquid within the container can be pour from a directed area on lip of the container and with use of a handle so that one does not burn themselves and can have a firm grip on the container.

6. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Industrial Applications, SGL Group and Specialty Graphite and further in view of Swinehart.

7. Regarding claim 16, the reference Industrial Applications, SGL Group disclose products for industrial applications from coarse grain mold stock to precision machined part of high purity, coated fine grain graphite which can make crucibles used in ferrous metallurgy, non-ferrous metallurgy that may be used in heating systems and refractory manufacturing (see pages 1-2). Specialty Graphite discloses graphite grades that may be used in the industrial applications mentioned above in crucibles. Specialty Graphite discloses the graphite grade of R7510, which has a thermal conductivity of  $100 \text{ Wm}^{-1}\text{K}^{-1}$ , a compressive strength of 125 MPa, a Young's Modulus of 11.5 GPa, and a bulk density of  $1.83 \text{ g/cm}^3$  (see page 1). Neither Graphite Specialties nor Industrial Applications, SGL Group discloses the crucible to be specifically a single piece container that is partially covered by a non-reactive coating that is resistant to acids and temperature of at least 400 degrees Celsius. The reference Swinehart discloses a crucible for growing macrocrystals. The crucible is used to grow crystals of halides of



Art Unit: 1797

an element of Group 1a and Group 2a of the Periodic Table, particularly the alkali metal of fluorides and alkaline earth metal fluorides, lead fluoride and crystals of the foregoing salts which are doped with desirable metal ion dopants. The crucible is of unitary (or monolithic) material inert with respect to a melt to be solidified, such as graphite, able to withstand temperatures required to melt the material to be grown and to be shaped so that the bottom is generally trapezoidal or conical bottom, tapered downward, the width of the bottom being less than that of the top of the crucible. Depending on the particular halide used as the melt, the crucible may be heated between 100 to 500 degrees Celsius. As disclosed in Figure 10, the generally cylindrical monolithic flat bottomed graphite crucible has the interior surfaces coated by a temperature resistant coating or a surface polished smooth with a fine metal or glass wool or abrasive pads to minimize the extent to which melt might enter pores of the graphite (see column 1, lines 37-42, column 2, line 57-59, column 7, lines 23-34, column 9, lines 50-55, column 10, lines 49-60, column 17, lines 41-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the crucible made of a graphite grade of R7510 to be of a single piece that is resistant to acids and temperature of at least 400 degrees Celsius, so that one can use the single piece crucible at high temperature without worrying that the acid will leak through the container leaking the possibly corrosive acid.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE T. MUI whose telephone number is (571)270-3243. The examiner can normally be reached on Monday-Thursday 7-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTM

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797

<b>Notice of References Cited</b>	Application/Control No. 10/824,281	Applicant(s)/Patent Under Reexamination PANGRCIC, ROBERT A.	
	Examiner CHRISTINE T. MUI	Art Unit 1797	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,277,351	08-2001	Swinehart, Carl Francis	423/462
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	SGL Group, Industrial Applications, 2000, SGL Group, pages 1-3.
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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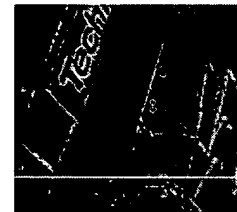
DEUTSCH



SEARCH

Graphite Materials &amp; Systems (GMS)

## Industrial Applications



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Products / Businesses

Graphite Electrodes

Cathodes

Furnace Linings

Carbon Electrodes

Graphite Specialties

Electronic Applications

Industrial Applications

High-Temperature

Applications

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Electrical Carbons

Process Technology for

Corrosive Media

Expanded Natural Graphite

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Brake Discs

Composite Materials

Composite Components

Fuel Cell Components

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Products for industrial applications range from coarse grain mold stock to precise machined parts of high purity, coated fine grain graphites for numerous industries.

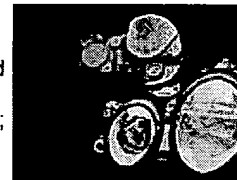
Graphite Specialties offers a comprehensive range of materials, from iso graphite extruded, die and vibration molded graphite, flexible and rigid felt (**SIGRATHERM** CFC (**SIGRABOND**®)), optimally suited to the customer application requirements. We also provide in-house expertise for design, engineering and machining of even the most complicated graphite, carbon-carbon and felt components.

- ☐ Materials
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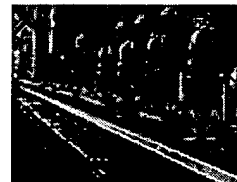
### Tool Manufacturing

- ☐ Large sized blanks, sandwich dies for pressure sintering processes
- ☐ Graphite dies and rods for production of diamond tools
- ☐ Powder and graphite rods for diamond synthesis; heating elements and support parts for production of synthetic diamonds
- ☐ Large sized blanks and graphite electrodes for electrical discharge machining (EDM) for forging dies, die casting molds and injection molding tools
- ☐ EDM



### Glass and Ceramics Industry

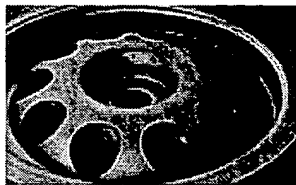
- ☐ Tin bath linings, cooling equipments and top rollers, guidance systems for the tin bath, gas guide systems and insulation felts for the production of float glass
- ☐ Scoops for distribution of glass drops, molds and various accessory parts made of carbon, graphite or carbon composites for container glass production
- ☐ Graphite and C/C parts for technical glass production
- ☐ Graphite and C/C dies and plungers for hot pressing processes for the production of e.g. boron nitride products and others
- ☐ Furnace components for manufacturing high performance ceramics



### Ferrous Metallurgy

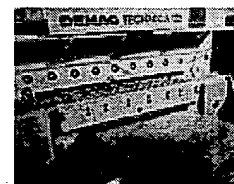
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- ◆ Large sized blanks and molds for pressure casting, centrifugal casting and wheel casting; graphite plates for cooling of complex grey iron shapes
- ◆ Large sized blanks and graphite dies for continuous casting of stainless steel and grey iron
- ◆ Electric heating elements, holders and contacts for vacuum steel degassing systems
- ◆ Crucibles for gas analysis of metals



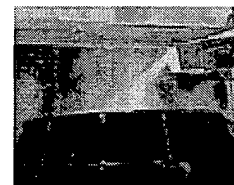
### Non-ferrous Metallurgy

- ◆ Large sized blanks, graphite dies and plates for continuous casting of non-ferrous and precious metals
- ◆ Large sized crucibles and heating systems for melting and holding processes
- ◆ Fluxing tubes, gas distribution and gas injection systems for purification of aluminum melts; plates and belts for run-out tables for aluminum profile extrusion; crucibles and boats for aluminum casting; electrodes for aluminum surface cleaning
- ◆ Electrical contacts, dies and support plates for brazing processes
- ◆ Crucibles for gas analysis of metals



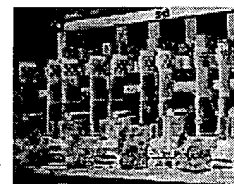
### Refractory Manufacturing

- ◆ Crucibles
- ◆ Graphite plates for casting molds



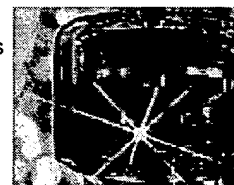
### Electrochemistry

- ◆ Electrodes for aqueous and organic electrosynthesis
- ◆ Graphite anodes and cathodes for chlorine-alkali electrolysis
- ◆ Decomposer graphite granules for mercury cells
- ◆ Electrodes for chemical separation processes
- ◆ Graphite anodes and cathodes for electrolysis of lithium, sodium, magnesium and fluorine
- ◆ Anodes for corrosion protection of pipe lines



### Medical Technology

- ◆ Graphite discs as heat sinks for X-ray anodes
- ◆ Dental crucibles for melting precious metal alloys
- ◆ Operating materials for manufacturing of mechanical heart valves



### Nuclear Industry

- ◆ Graphite sleeves as support structure of fuel elements and as gas ducts in gas cooled reactors



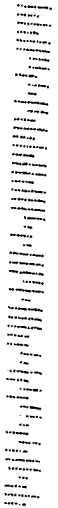
- ◆ Fuel matrix powder, graphite and composite components for high temperature reactors  
SGL Group supports the database activities of the IAEA on irradiated nuclear graphite properties.



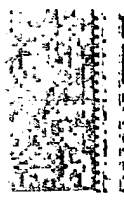
visit the IAEA website

- ◆ Tiles made of graphite or carbon composites for lining nuclear fusion reactors
- ◆ Containment shells for nuclear transportation

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